

A

Treatise on Diet

By

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2 Didrot ridicules the popular adage, "The more heads the better council"—because nothing is more common than heads and nothing so unusual as good advice. Publishing the contradictory opinions of the professors of medicine induces a popular scepticism in the art. 3. The Emperor Adrain was killed by consulting too many physicians. Sanctorius measured his injesta with accuracy. 4 A patient being induced to consult a second physician finds to his horror that his disease has been entirely mistaken. 7 Man has no natural food. Wheat, rye, barley and oats are the work of culture from inferior grasses. Celery is from the disagreeable apium graveolens. Cabbages were cultivated from the colewort not weighing half an ounce. The potatoe is from a small bitter root growing wild in Chili. 8 Cookery is to spare the stomach the drudgery of softening the fibres and loosening the textures of the food, and of rendering it more palatable so as to suit the stomach to perform its work. Dr. Arbuthnot says, what we take daily by pounds must certainly have more influence over an existing affection than that what we take but seldom in only grain doses.

17. The walls of the stomach are never collapsed, the stomach contains always some gas. (197)

29. The saliva holds a mucus in suspension giving rise to tartar on the teeth, furnishing the matrix for the lime salts. 34. The small intestines secrete the intestinal juice, 38. Bichat states that the bile is secreted from the arterial blood and not from the portal vein. Majendie thinks the latter has also a share in the biliary secretion. 51. To understand secretion we must observe serous exhalation. Magendie injected tepid water into the artery going to a serous membrane, as soon as it found its way through the capillaries to the vein, small drops would pass out of the membrane and quickly evaporate. 54. The choroidal pigment leaves an ash rich in iron. Berzelius thinks that secretions, not the exhalations, are formed from albumen. (As the chick with its blood and bones is the product by heat on the albumen of the egg we conclude that albumen is the universal plasma of all organic life. Scholl.)

In secretion the influence of the nerves play an important part. 56. Dr. Young thinks that the process of secretion may be analogical to Wallaston's little battery;—a nervous filament piercing the walls of a capillary blood-vessel and acting as a positive pole. 61. Cold applied to the skin, excites the kidneys while cutaneous transpiration is at a minimum. 65. If by nutrition the used up parts of the body are repaired, why does death take place? Is there a structure incapable of renewal. Why should man die from the hardening of his fibres if they are capable of renewal? 66. Even old persons die generally of some inflammatory affection in consequence of some organ injured by disease. 71. Ruysch knew a man who was wholly deprived of his appetite by a salivary fistula and maniacs constantly spitting loose their appetite. The saliva is hence necessary to digestion.

72. The stomach is divided by muscular contraction during digestion into two halves, the pyloric and splenic

(198)

ic extremity. The splenic part separates the liquid from the food, and in the pyloric part it is converted into Chyme. 76. The chyme as it is formed in successive portions passes out of the stomach. The chyme is a stimulus to the pylorus, the same as faecal matter is to the rectum. 80. Chylification takes place in the duodenum. 81. Faeces perfectly white were rendered green by pouring nitric acid over them, showing that they contained bile. (?) Dr. Prout has shown that less carbonic acid is exhaled from the lungs under the influence of nervous depression, fatigue and intoxication. 97. The kidneys seem to be able to separate an acid secretion, as nitric and oxalic acids, in some state of the system; when acids are separated the urine is generally small in quantity. (Mrs. L.—) 98. The imposition of urine-casting originated in the middle ages when the larger portion of physicians were ecclesiastics who either saw their patients in the churches, or were satisfied to inspect their urine. 101 Dr. Wilson Philip divided the pneumogastries in rabbits and digestion was arrested, if however the stomachic end of the nerve was kept under a galvanic current, then digestion proceeded as usual. The secretions of the stomach and intestines are always acid due probably to nervous action, while the alkali is transmitted to the liver producing an alkaline bile. The faeces, urine and sweat are likewise acid. 104. An emetic in a state of hunger will abolish the sensation and create disgust for food; and eating soon after vomiting, allowed fermentation to take place, indicated by acid eructations and flatulence. Hunger seems to be a state of the gastric nerves, & a narcotic as tobacco applied to them arrests the sensation. 188. Bulk in food is a necessary condition to a good digestion. Thirst is partly due to habit. III The process of digestion calls for an afflux of blood and thus the powers of the senses are sometimes interfered with. When the chyle

enters the blood the body becomes enlivened, at this time animals betake themselves to action. Mr. Hardwood and the two pointers. Exercise just before meals bringing on fatigue is just as bad as after meals.

Materia Alimentaria.

(The proximate element albumen entering into the framework of man is derived from the organised kingdom and has already existed in a living form. Man makes use of everything under him and appropriates it to his body, he is therefore the most perfect of organized beings, what he has of his own is mental superiority. S.) 118. Man is omnivorous, his stomach being less complex than the stomach of the herbivora and longer than that of the carnivora. Broussonet thinks that the animal food we use should stand in relation to the vegetable food as 12 to 20. 124. Caesar, Strabo, Diodorus and Siculus lived principally on flesh and milk. 127. Magendie took a small dog and fed it on sugar and distilled water, in the 2nd week it commenced to get thin, though its appetite remained good and ate about 6 to 8 ounces of sugar daily, urine abundant, in the 3rd week its leanness increased and a small ulcer appeared on the corner of both eyes which in a few days produced perforation, and running out of the humours of the eye. It expired on the 32nd day. An examination showed that the muscles had wasted four-fifths of their size, the fat had been all absorbed. 129. Two other dogs were fed on olive oil and water, for 15 days they did well, the ulceration of the cornea did not appear but they died of the same debility as the proceeding on the 36th day. The same experiment was repeated with butter, the same phenomena took place, death on the 36th day. Flesh administered on the 34th day as much as the dog would eat did not avert the fatal issue. The right eye presented the corneal ulcer. 131.

The Kamchadales are frequently compelled to live on fish-oil which they do very well by mixing the oil with saw-dust or the raspings of plants. 132. Chemistry has made us acquainted with the proximate elements constituting our food, as albumen, sugar, fat, acids etc. and may be classified as follows:

1. Fibrinous aliments, as flesh. 2. Albuminous aliments, as eggs. 3. Gelatinous aliments, as calves' feet. 4. Fatty and oily aliments, as butter and pork. 5. Caseous aliments, as cheese. 6. Farinaceous aliments: flour and starch. 7. Mucilaginous aliments: Dextrine and gum. 8. Saccharine aliments: sugar and figs. 9. Acidulous aliments: Oranges.

Drinks may be classified into: 1. Aqueous. 2. Juices of vegetables and animals. 3. Fermented liquors: wine and beer. 4. Alcohol liquors.

134. A substance may be highly nutritive and still of difficult digestion, 1 ounce of fat meat is said to be as nutritious as 4 oz of lean. 135. The healthy stomach disposes most readily of food of a certain density, which may be called its digestive texture, if food is too gelatinous the stomach is hindered in digestion. (The physical condition of food under which it is presented to the stomach rules its digestibility. An ounce of gelatinous food introduced without admixture into the stomach would be indigestible, if however it was previously mixed with 4 ounces of bread it would digest easy enough. The same would hold good with butter or any thing else. The most indigestible substance, when introduced into the stomach not exceeding a certain proportion; the same way as medicines have to be administered in suitable quantities, and mixed with other matters so as to divide and keep apart the different particles thereof, and so as to secure a degree of porosity, as food will acquire when chewed by admixture of air, and the proper admixture of

the saliva and gastric fluid, then all foods will digest in the same time and equally well. A number of concentrated foods mixed, will where permeability is secured, digest in larger quantity and more readily than if only one article was used. Water will take up a certain amount of salt and no more, but if I add some other kind of salt it will take up another portion of that, and if I add a 3rd salt also a portion will be dissolved of that. The same holds good in regard to solutions of essential oils in water. Scholl.)

136. Mutton seems to have the consistency most suitable for the digestion of the stomach. Wedder mutton is at 5 years in season, Ewe mutton at two years.— In order that the churning of the stomach may be to a purpose it is necessary that the food have a degree of consistency, soups and oils are on account of lack of consistency difficult of digestion. 137. Jellies and gelatine in solutions or soups probably on account of a degree of tenacity with which they retain the water, or not allow its absorption, are with much difficulty digested. 138. The fat should be interposed among the muscular fibres so as to give it a marbled appearance, in order to constitute good meat. Animals not castrated until after puberty retain much of that coarseness of the entire male. (This fact would argue that the tissues of an organic being are not so mobile as is generally supposed, they are not built up to day and torn down to morrow, but rather that they tissues are comparable to machines that functionize and live possibly as long as the individual, and that the changes or metamorphosis of tissues go on in the liquid tissues, or fluids circulating in them, which fluids are daily replaced, used up as fuel for the purpose of the economy and then excreted again. Muscular tissues may be wasted away and be reproduced as is evinced by the uterus, but this does not prove that a

similar change goes on interstitially in the muscles all the time. It is likely, that a too lately castrated animal, when starved so as to become very lean, and then rapidly fattened would produce meat of a quality far superior. Scholl.) 138. The flesh of hunted animals is very tender. 139. Vinegar administered a few hours before killing has the same effect; to a fowl a spoonful will answer. By cooking the principles of the food are chemically modified and their textures mechanically changed. **BOILING** coagulates albumen, therefore meat when boiled too long becomes a hard indigestible mass like an overboiled egg. In young meats containing gelatine, protracted boiling will prove equally bad. Young meats as chicken and veal are more wholesome roasted than when boiled. Dr. Prout has justly remarked that the boiling temperature is much too high for many kinds of food, this is so especially with food ordered to be stewed or boiled slowly. 141. The loss from boiling depends on the dissolution of fat and gelatine in the water. Mutton loses one-fifth, beef one-fourth. Boiling is best applied to vegetable substances. Cabbages are frequently not boiled enough. Soft water is to be preferred. **ROASTING** corrugates the fibrine, coagulates the albumen, and evaporates the water. Care should be taken not to have meat overdone, nor should it be under-dressed since both conditions are unfavorable to digestion. By roasting, meats lose one-third of their weight, they are more nutritious than boiled meats.

Frying. This is a most objectionable process, the heat is applied through the medium of boiling fat or oil the temperature of which is much higher than that of boiling water, therefore it must not be carried too far, or else the meat will be hard, dry and indigestible and the fat have become empyreumatic & very indigestible. **Broiling.** By this operation the albumen on the surface of

the meat becomes suddenly coagulated, which prevents a further loss of the juices. **Baking.** Baked meats are hard of digestion because the fat becomes diffused through the meat, and some of the fat it turned empyreumatic. 145. **Condiments.** The Swiss used a spirit distilled from gentian. Condiments are divisible into the saline, the aromatic and the oily. Salt appears to be the digestive stimulant of all warm blooded animals. Animals in the wild state will undergo great risks to obtain it. —I found a man laboring under digestive troubles with great emaciation due to the abstinence from salt, the use of which restored him in a short time. 147. An unsalted diet allows the bowels to become infested with worms. In Ireland salt and water is the popular remedy for worms. In Holland the laws of ancient times, gave it as the hardest punishment that could be inflicted on a criminal, to feed him on bread and water without any salt. These criminals were devoured by worms ingendered in there stomachs. One pound of salt is generally added to one bushel of flour. 148. A little salt will promote vegetation while a good deal will kill it entirely; the same holds good with regard to the preservation of meats. In salting Meat it is possible that a chemical combination takes place (similar to that when salt combines with sugar, or the salting process may abstract some water combined with the tissues as well as the juices dissolved therein, thus rendering the meat less juicy, less nourishing and less digestible. S.)

149. Salt and water will dissolve copper, but salted meat will have no action on the copper thus we may suspect a chemical combination. VINEGAR should be used only in small quantities, and is then wholesome when used with vegetables to prevent their fermentation in the stomach (?) 150. Gelatinous matters are rendered more digestible by vinegar, (acting probably in the same

way as acids will on starch, gum and sugar, bringing them into a substance similar to glucose. S.) Lemon juice added to glutinous soups renders them more digestible.

Aromatic condiments, are the Peppers, cinnamon, cloves and nutmegs, the pot herbs, as; parsley, onions, horseraddish and mustard. 151. The best quality of the spices is to stimulate the appetite and their worst is to destroy, by insensible degrees, the tone of the stomach.

—The worst of evils will result from drinking liquor to pacify an upraided stomach.

Oil when used in small quantities with lettuce prevents fermentation and flatulence. 152.

Drinks. Animals will survive longer without food than without drink. 153.

Reddi found that capons without food or drink died invariably on the 9th day, but those that were allowed water survived until the 20th day.

Drinks require to be examined in regard to their temperature, quantity, quality and time they are taken. 154.

Cold drinks when the body is heated and fatigued will produce collapse of the stomach. Hot drinks are equally injurious.

Iced fluids should never be taken, especially not after meals since they would arrest digestion.

The life of the gramivorous animals is limited by the decay of there teeth, hence the decay of the teeth of man is surely not caused by warm food as Ribe

asserted. The Romans used tepid drinks. The molars of the elephant, consisting each of a single piece of bone

grow from below as fast as they are worn away on the top by use.

155. (If too much drink is taken into the stomach

then the proces of digestion is impeded, in the first instance by its weight the stomach has to move the fluid

mass in adition to the food and thus the force of the stomach is consumed without any benefit, & soon it gets tired out..

2ndly the food being much diluted, will present but little matter to the pepsin of the stomach adher-

ing to its walls, and the fluidity of the food washes over it too lightly so as not to bring it away from the walls of the stomach and mix with the food; thus the superfluous water has to become first absorbed before digestion can go on. Scholl.) Since it is so hard to remove the pepsin from the walls of the stomach it is not likely that the gastric juice becomes too much diluted. (If the food is too dry then the stomach can move the mass but with difficulty and the gastric solvents have greater difficulty in penetrating the mass and causing solution. It is likely that the acid part of the gastric juice will mix more readily with the water injected than the pepsin so it is that some foods being more in need of pepsin than others are particular as to their state of concentration.)

156. Different aliments require hence different quantities of drink to make the solution. Vegetable food demands least, animal food most, especially baked meats. Drinking before meals is bad, drinking during a meal may assist or retard digestion according to the demand of the food. The sensations of the individual are here the best judges. 157. Eating too fast is apt to cause dryness afterwards, because the food not being properly mixed with saliva the mass is too dry. The best time for drinking would seem to be 4 or 5 hours after a solid meal, at that time the digested food has entered the blood which may require now a diluent; the drink may also be necessary to carry off the remainder of the injeſta, a cup of tea at that time is likely to be servicable.

Water, holding putrescent animal or vegetable matter, as well as mineral impregnations are highly nuisible. Spring water from large springs is purest. Soft water should be used for domestic purposes. 161. Horses when confined to hard water become illconditioned and are often attacked with gripes; in sheep hard water will produce diseases of the spleen. Riverwater is vapid

since it is deprived of air and carbonic acid. 162. Well water. Old wells furnish purer water than new. Alpini ascribes elephantiasis to the impure water of the Nile. Bricks harden the water. 163. Snow water can not be accused of causing goitre since it occurs also at Sumatra where snow is never seen. Marsh water is very impure and unfit for use. Lead pipes should not be used for conducting water. If leaves and vegetable remains should find their way into the water, they will by their decay furnish an acid which will act on the lead, dissolve it, and produce when drunk, colic. Thus originated the noted colic of Amsterdam. 166. Lord Ashburnham's servants were poisoned by lead, by the water containing a large quantity carbonic acid dissolving the lead, as it was passed for many miles through pipes of that metal. Iron pipes are best.

168. Contaminated water should always be boiled before use. In China, water is never drunk till boiled. **TOAST** water—should be made from a biscuit roasted to a coffee color. **BARLEY** water was preferred by Hippocrates in acute diseases. Lemon juice improves it as a drink in disease. Oats when freed from their cuticle, are called groats. 170. **Sage** tea is quieting to an irritable stomach. **Balm** tea has the same property. 171. **Tea** is decried by one party as a poison, by another it is lauded as a medicine. Teas are divided into black and green. 172. If tea is drunk too soon after meals, then it will cause a sense of distention and a disturbance of the digestive function by acting too much as a diluent and luggage. When drunk just before going to bed it may cause vigilance. Four hours after dinner is the time for tea. 173. **COFFEE** is a stimulant to the stomach and when taken with meals will help the digestion of food that ordinarily would be indigestible, such as fatty substances. It also possesses the power to counteract narcotics.

The French take coffee immediately after dinner. Coffee should be made by the process of infusion and not by decoction since the latter dissipates the aroma. CHOCOLATE is manufactured from cocoanut, being brought into a paste with sugar, milk and eggs, to which vanilla is occasionally added. It is objectionable on account of the oil it contains. COCOA is less objectionable than chocolate. WHEY is sometimes a good drink. IMPERIAL water is a solution of cream of tartar in water flavored with lemon peel. It should only be used as a medicine.

116. Soda water should not be used after meals since it will cause by its gas a distension of the stomach arresting its muscular contraction. **Fermented liquors.**

117. A surgeon gave to two of his children for a week alternately to the one a glass of Sherrywine after dinner, to the other an orange. The one that received the Sherry had highcolored urine and his stools destitute of bile, while the one that received the orange remained always in health. Wines containing malic acid are of bad quality. Red wines are fermented with the dregs. 187. Mr. Brande precipitated the coloring matter of wines with subacetate of Lead and next saturated the liquor with subcarbonate of potassa and thus obtained the alcohol without distillation. 188. His table shows for Portwine 25 per cent of alcohol, Claret 14 per c., Hock 8-14 per c., ale 8 per c., brandy 53 per c., Wines imported from Spain, Italy and Sicily have brandy "fretd in" to make them marketable. 189. Dr Macculloch says that it is spirit drinkers, that are mostly affected with diseases of the liver: (those drinking wine are affected with gout in preference. Wines may be divided into sweet wines, sparkling wines, dry and light and dry and strong wines. Sweet wines contain a proportion of sugar which escaped fermentation.

They are prepared by boiling the must, or by adding
(208)

sugar, or by drying the fruit. 191. On weak stomachs they are apt to become ascenscent. **SPARKLING** or effervescing wines contain carbonic acid the product of fermentation or artificially introduced, they are more intoxicating than other wines (owing probably to the carbonic acid forming by its action upon the alcohol an ether, what is evolved with the gas when introduced into the stomach and acting on a large surface is rapidly absorbed. S.) Dry and light wines as Moselle and Rhine wines contain only acid and spirit, no sugar is left. They also contain a volatile ether, produced by the action of tartaric acid on the alcohol, but they do not intoxicate so so speedily and their effects are longer lasting than those from champagne. 192. Light and strong wines such as Madeira, Port and Sherry have some of their acid neutralized by lime. 193. **CIDER AND PERRY** are apt to turn sour. **BEER** is by the chinese prepared from rice, by the americans from Maize. Herodotus tells us that making beer from barley was discovered by the Egyptians. 194. Persons drinking much beer are apt to get bloated with fat. 195. Franklin stated that a penny-loaf contained more nourishment than a pint of beer. 196. Sydenham took a glass of table beer with his meals. Ale was orginally made from barleymalt and yeast alone. 197. A prejudic existed against hops, which were styled "pernicious weeds," Hops precipitate the vegetable mucilage and thus make beer keep. **PORTER** is made from highly dried malt. **ARDENT** spirits when indicated should be mixed 12 hours previous with water so as to have them well mixed before being used.

201. **Milk** coagulates in the stomach, is hence a mixed food. **CREAM** has some of the properties of oil, it contains $3\frac{1}{2}$ parts of cheese, 92 of whey $4\frac{1}{2}$ parts per cent of butter. A piece of calfs stomach no larger than half

acrown will coagulate milk enough for a cheese weighing 60 pounds. Whey contains sugar of milk which it yields on evaporation after having been clarified by eggs. Koumiss is the fermented milk of the mare made by the Tartars and used as a sort of wine. Whey contains also the phosphates of lime and iron and some alkaline salts. CHEESE is one of the least digestible of our aliments, when toasted it is highly injurious. Butter when heated becomes empyreumatic, and will then induce heartburn.

206. Milk is not coagulated by boiling and many individuals can take it then that could not bear it in the raw state. 207. Asses milk comes next to human milk. Eggs may be classed next to milk, they are most digestible when lightly boiled, vinegar will help digesting them. raw eggs are laxative, when boiled hard they are apt to bring on costiveness.

208. **Fish**, as evinced in fishing towns is sufficient nourishment for all the purposes of life, however a larger quantity is required than of meat and the appetite sooner returns. It bestowes also less stimulus to the stomach than meat and thus stands in need of condiments. 214. Fish are divided into fresh water fish, salt water fish and shell fish. Cod, turbot, whiting, flounder, sole and haddock are of the least stimulating of the nutritious species. Fish when cooked is known to be good, by the flakiness of its fibres and their opaque appearance; when it looks bluish or is semitransparent after having been sufficiently cooked it should be rejected. When fish is in high perfection it presents a layer of coagulated albumen between the flakes looking like white curds. Cod is not so easy of digestion as whiting or haddock. 211. Sea-fish is much improved and rendered more palatable by "crimping." 212. The gelatinous skin of the turbot and parts about the head are apt to disagree with invalids.

Salmon may be considered most nutritive, but it is stimulating and oily and not very digestible; requiring vinegar to aid its digestion. Fish is in season before the spawning time arrives. The eating of fish during the spawning season is sometimes productive of diseases. 213. Eels contain a large quantity of oil and are consequently hard of digestion. Oysters enjoy a reputation they do not deserve. The oyster casts its "spat" in May, an oyster is never good except there is a "K" in the month. Lobsters though nutritive are hard of digestion. Persons have been attacked with pain in the throat and eruptions of the skin after eating them. Shrimps a species of sea-crab are easy of digestion. Mussels have been known to kill, and an efflorescence is especially noticed when the fish has been tainted. Dr. Burrows mentioned the cases of 2 boys 8 & 14 years, who died from eating a dozen mussels fried, but picked up in a somewhat tainted state. Vancouver relates that some of his men got ill from eating some mussels which they had picked up, one of the men died. They were attacked an hour after eating them with numbness of the face and extremities, with sickness and giddiness. Eating some species of small fish as the pike, great care has to be used to remove the small bones. Irritation of the alimentary canal and fistula have been produced thereby. 217. Persons confined to a fish diet secrete a peculiarly rancid sweat. The prohibition of fish to the priests of Egypt for preventing the leprosy may have had a foundation on facts. Salt and vinegar are good additions. Boiling is the process for cooking fish. Salted fish like salted meat is very hard of digestion, potatoes are the best addition, parsnips will also do. Apples and fish, or milk and fish do not agree, serious diarrhœa has followed such a mixture.

Birds offer great variety as to nutriment, digesti-

bility and stimulus. The whiter meat of domestic birds, as the wings and breast of chicken are less nutritious, less stimulent and less digestible than the darker meat of wild birds. The whiter meats are less readily digested but also are less apt to run into fermentation. 220. The wholesomeness of a meat must depend on its adaptibility to a particular case and purpose.

Farinaceous food.

The Egyptians attribute the art of feeding mankind on so small a grain as wheat, to their immortal Ceres. Dr. Darwin. The superiority of wheat over rye and other grains is due to gluten, a vegetable albumen; it is this which adapts it so well to the making of bread. 221. The discovery of the art of making bread is the work of ages. 222. In mixing the paste, 2 parts of flour to 3 of water are generally used, the older and better the flour the more water will it take. The gluten is or contains the fermentative principle and by its adhesiveness keeps the bubbles of carbonic acid entangled in its meshes and thus the dough becomes raised. 223. For the use of barm, collected from the fermentation of beer we are indebted to the Gauls. 224. It has been discovered that the action of a vegetable acid on gluten produces all the effects desired, and of such a nature is leaven. The mean heat of an oven for baking is 448 degrees, bread loses about one-fifth of its weight in the process of baking. Bread is much more miscible with water than dough and on this, in a measure its good qualities depend. (The high temperature to which bread is subjected, converts a large part of its starch into textrine which is then readily transformed into glucose by the saliva and pancreatic juice. Scholl.)

225. Of unleavened bread biscuits are best. BREAD is classified into white, wheaten and household bread. In the second the coarser bran are separated and in the

household bread all the bran are left in. Bread made from the whitest flour is apt to render costive. This is counteracted by the bran which act as special stimulus mechanically upon the intestines. The French bake with carbonate of ammonia. 226. Barley bread has a sweetish but not unpleasant taste, is rather viscid and more difficult of digestion than wheaten bread. Rye bread is apt to lay heavily on the stomach, to become sour and to cause purging. 227. Sometimes oatmeal is made into bread and is then called jamock, when made into small cakes they are called bannock and riddel cakes. Potatoes have also been made into bread but to prevent crumbling of the bread they require the addition of wheat flour. 228. An excellent bread is called brown-bread made of a mixture of rye and wheat flour which is neither constipating nor laxative. BREAD is a most important article of diet. Besides its nutritive value it fulfills the mechanical function of dividing by its admixture the more concentrated elements of food. The concentrated dishes of french cookery are rendered less injurious by the large admixture of bread that people make use of at their meals. If I eat a rich soup without stale bread my stomach feels offended and I suffer from heart-burn but if the bread is conjoined no such result ever occurs. New bread should not be eaten since it becomes cloggy from being chewed while the water in the bread has not yet sufficiently entered into latent combination with it. Scholl.)

In children bread may sometimes induce acidity. 230. To make nice bread of poor flour the baker finds it necessary to add alum in the proportion of three ounces at least to 240 lbs of flour; which bread is liable to produce constipation. 231. Half a drachm carbonate of Magnesia added to bad flour will make good bread says Mrs. E. Davy of Cork. Salt added to bread renders it

more digestible. — The most digestible pudding is made from bread and boiled. Suet pudding is worst of all. All pastry is an abomination, and half the cases at least of indigestion after dinner parties, are due to them. 232. Among the farinacea the potatoe holds a distinguished rank and supplies in some respects the place of bread and should therefore be eaten freely when our food is at all concentrated. Potatoes when fried in fat should be studiously avoided. Mashing is of doubtful utility and waxy potatoes should never be eaten.

Rice is the general aliment of the people of the East with whom it answers the same purpose as bread does with us. 233. Rice has been accused of causing blindness. It is a popular remedy for diarrhoea. Sago, Tapioca and arrowroot are of a simular nature. The pulses constitute the second division of the farinacea. They form a more unctious flour than grain, which when mixed with water forms a milky mixture due to the oil it contains. Bread made from them is apt to lay heavily on the stomach and to occasion flatulence. Peas when dry are remarkable for the generation of gas in the intestines. When green they are digestible (inclining to looseness.) 235. Kidney beans with pods are of easy digestion. Nuts are supposed to have formed the first food of primitive man and in some countries furnish a considerable source of it. Chestnuts are more allied to the pulses than the nuts and by expression yield an oil. 236. The chestnut must be highly nutritive since it forms the chief food of the lower order of the plains of Lombardy.

Esculent roots, are parsnips, turnips, carrots, Jerusalem artichokes and raddishes. 237. The carrot is slightly laxative. The turnip is rather flatulent, The parsnip is nutritive and digestible.

THE JERUSALEM ARTICHOKE gira-soll or turn-sun is agreeable but flatulent, it should be accompanied by salt

and pepper. Radishes contain little else than water and woody fibre and are apt to disagree with the stomach. 239. Onion soup is used by the french. The leek, garlic and shallot are of the same species. Horse-radish from the greek hippos and bovs.

Esculent herbs.

Raw herbs are less digestible than when cooked. According to Xenophon, the ancient Persions lived on water-cresses. Lettuce is rendered less soluble in the stomach by vinegar says Gosse. Oil may do the same. Lettuce cured Galen in the latter part of his life of vigilance. CABBAGE contains an essential oil giving the odor to cabbage-water which is liable to produce offensive effects. It should therefore be boiled in two waters successively. Asparagus, digests easily but is flatulent.

242. **Fruits.** Nothing can be more injurious than the habit of eating fruit as a desert when the stomach is already loaded. 243. Fruits may be arranged under the heads of stone fruits, the apple species, small seeded fruits, small berries, and farinaceous fruits. The stone fruits are least digestible. The pulps of plums are frequently passed from the bowels undigested. The ripe peach is the most delicious and digestible of stone fruits. Nectarines and cherries are apt to disagree. The Apple species (are less pectinous and more starchy than the stone fruits) they are more easy of digestion especially when roasted. PEARS are not so easy of digestion. Oranges may be allowed to dyspeptics, but the inner skin must be scrupulously rejected. Of the small seeded fruits the strawberry and raspberry stand first. The gooseberry is less wholesome (and currants pass frequently undigested after having induced spasmodic colic. S.)

GRAPES are cooling but the husks and seeds should be rejected, I have seen them retained for 3 months. J. II.) The down on the grapes is apt to cause soreness of the

mucous membrane of the mouth. MELONS do not agree with weak stomachs. 245. Fruits are rendered more wholesome by cookery. Baked apples afford a pleasant repast. DRIED fruits are not so good. 247. Eating a variety of dishes, persons are liable to overfeed, by making the stomach receive not one meal but a succession of meals. Sponge cake is especially bad. Our cakes are quite different from the cakes or mustacea of the Romans, who made them of a little flour with anisseed, cumin and some aromatics, and which were introduced after feasts to prevent the evil effects of over-eating, and hence originated the "Bride cake" excellent for producing instead of preventing indigestion.

Periods for meals.

249. In health the appetite is regulated by habit, in disease the appetite is but an imperfect monitor. 250. Physicians are agreed as to the importance of regularity, regarding the number of meals and the time they are taken. Dr. Darwin justly observes that persons taking their meals regularly, have not only the stimulus of the food eaten, but also the stimulus of periodicity to assist digestion. If the proper time for meals is gone over then the appetite will leave and not return till the next period. 251. "Little and often" may do well enough in certain states of diseases (as Dr. Brown Sequard would have dyspeptis take a very little solid or liquid food at regular intervals of 10 or 20 minutes, no matter what kind of food used, until they should be able to eat three times a day.) In health such doctrine would be very troublesome or injurious. 252. In some persons food will digest in three, in others in five hours.

Breakfast. 254. The solidity of this meal should be regulated to the labor to be performed and to the hour for dinner, so as to do away with the luncheon.

Heartburn is apt to follow after a heavy breakfast, especially if much drink has been taken. 255. Liquids cannot be dispensed with at this meal, the system craves them. During sleep a person perspires twice as much as while awake, this fact would show the necessity of a liquid breakfast. **Dinner** was with the Romans but a light meal without meat or wine, with us it has become the principle meal. It should be near the middle of the day (excepting in hot countries where it should be at a late hour with another meal in the morning. S.)

Tea should be taken at 4 o'clock but without any solid food.

Supper. 261. A person should rise from the table as soon as the relish for food given by the appetite ceases, and in order that he shall not be deceived, it is necessary to eat slowly. 262. A too great degree of abstinence will weaken and distress both body and mind. People who confined their diet to a few figs from a mistaken notion of religion were visionary enthusiasts. 263. Obstinate fastings of maniacs disposed them to a disease resembling sea-scurvy. Athletes or race-horses can not be maintained at their athletic weight or at the top of their condition for any length of time, attempts to force its continuance is generally followed by disease. 264. Any sudden transition from established habits, both with regard to quantity and quality of food, are injudicious. When the city of Bochara was visited by famine, the inhabitants that lived on roots and herbs, soon died when they returned to bread and flesh.

Elizabeth Woodcock having been buried for 8 days under snow, and on being found she was supplied by her friends with food too assiduously, and this caused her death. 266. If a feeling of disgust or aversion is excited the stomach will never act with healthy energy on the ingesta. A groundless suspicion, that the food eaten was poisoned, produced sickness or distress and

vomiting, of those that had partaken of the meal. 268. It is bad for business men to have to do a long walk immediately before and after meals. 270. Exercise on horseback is very good on account of the shaking it imparts to the stomach and intestines, it is less fatiguing than walking, and the quick motion through the air, over constantly new territory, exhilarates the feelings in a great degree. (The rider becomes imbued with a sense of power, he is a conqueror, even if it is only the horse and territory that is conquered by him. Scholl.) If it had not been for the effects of bodily exercise Cicero would never have triumphed at the bar nor Caesar in the field. 261. In former times balls commenced at 6 and terminated at 11 o'clock in the evening. 272. The gas used in houses is a deadly poison. Sir H. Davy respired the pure gas carburetted hydrogen from a bag containing a gallon, after the first inspiration he felt a loss of feeling in the chest and about the pectoral muscles, after the second inspiration his senses went, but felt a terrible feeling of oppression in the chest, after the third inspiration this feeling left and he seemed to sink into annihilation. — Pulse threadlike and fast, a sense of suffocation followed, nitrous oxide relieved it, to return again accompanied with nausea, loss of memory and deficient sensation lasting till night.

Color of the dejections. The yellow stools of infants are often turned green by the air. 276. Milk will give pale colored evacuations, spinach green. Cheese is apt to pass undigested, and it has been mistaken for concretions. Magnesia will sometimes form balls of considerable size. Iron changes the stools black, magnesia gives them a white appearance. The core of oranges has been mistaken for something else.

Indigestion is the English literal translation of the Greek word *Dyspepsia*. 282. *Dyspepsia* is a disease in which one or more of the several processes forming food

into blood are imperfectly or improperly performed in consequence of either a functional aberration, or an organic lesion. — Acidity of the stomach and urinary depositions are equally indicative of a deranged digestion. (From the nervous connections, all parts of the system will impart their influence to the stomach. S.) Thus an affection of the head, of the urethra or pelvis, may cause vomiting. The blood does not coagulate in healthy vessels, the urine does not decompose in a healthy bladder, and the food does not ferment in a healthy stomach. 288. If a patient goes to bed with a load on his stomach he may pass into a comatose condition with symptoms of apoplectic stertor, and if the stomach is not relieved, the patient will die. 289. The food is subjected in the stomach to the mechanical movements of the stomach, and the chemical action of the gastric juice.

The secretion of the gastric juice is influenced by the introduction of foreign agents, it is retarded by narcotics, and facilitated by agreeable condiments. It is further influenced by mental impression and periodicity. During the latter periods of digestion it is peculiarly difficult to excite the gastric secretion, and food introduced at this time into the stomach will cause indigestion. Exercise when accompanied with fatigue, habitual indolence, mental states, as fear, anger and surprise, will interfere either with the secretion of the gastric juice or the mechanical motion of the stomach. A person receiving unpleasant intelligence while eating, is unable to eat another morsel. 291. A preternatural excitement of the skin such as happens after the hot bath, or in hot weather will create nausea and a want of appetite. This induces people of hot countries to use condiments to stimulate the stomach. (The skin, when kept long under the influence of excitement, as is done in sweating, will lose its tonicity, the capillary blood-vessels

of the skin will become permanently dilated, and be in a state of paralyses, thus the blood will constantly flow in a too large proportion through the skin, and give off its fluids. Thus the internal pressure of the bloodvessels will not be sufficient to stimulate the gastric tubules to a secretion of the gastric juice, in fact this office of secretion is performed by the skin while it is secreting an acid sweat. The skin in this case not only relieves the kidneys of the secretion of urine but also the stomach of secreting the gastric juice: how far the cutaneous action may supplant the action of the liver remains an open question, we notice that the skin in hot countries is apt to turn dark, hence we may surmise that the biliary function is also in part supplanted by the skin. (Scholl.)

From the existence of a cutaneous paralyses which may not only affect the bloodvessels alone but may extend to the areolar tissue, which since it is made from the amœba is endowed with movement, we may presume the existence of a paralyses of the mucous membrane of the stomach, where the gastric juice and especially its lactic acid is produced in abnormal quantities, which may be brought about by using too hot drinks. This paralyses of the stomach, producing increased secretion of the membrane, producing stomachic atony & may have a peripheral as well as a central origin. Its periperipheral existence will produce a central change since the connection of centre and periphery is interrupted and the nerves thrown out of use, thus a central atrophy must necessarily follow. (Scholl.)

Wet feet have caused spasms of the stomach. 292. As the skin acts upon the stomach, just so does the stomach act upon the skin, all sympathies are reciprocal. When the skin is relaxed from the warm bed in the morning, then the stomach feels no appetite for food until the morning ablution has been taken to restore the tone of the skin, which may also be done by the fresh

air and exercise. (The less a person is disposed to sweating at night, the more apt he will be to have an appetite for breakfast. S.) — The mechanical operations of the stomach may become depressed or paralysed by various causes. Undue distention is the most frequent and powerful of these. An analogy may be observed in persons that retain their urine for too long a time, at 1st they are unable to void a drop. (I have seen paralysis from this cause in Mrs M. where the use of the catheter became necessary for over a week. S.) In a stomach overdistended vomiting cannot be induced even by violent emetics. Now a distention frequently repeated will bring about a lasting mischief. A glass of soda water may have such an effect. 295. Shoemakers, tailors and engravers are disposed to distention because the position prevents the passage of food and flatus through the pylorus. 296. Irritation of the nerves will occasion viciated secretions, and vice versa. **D u o d e n a l d i g e s t i o n .** In the duodenum the food is mixed with bile and probably also by a secretion peculiar to this part of the canal. This part of the intestine is peculiarly confined where it passes out of the ring of the mesentery, so that its contents may sometimes meet with difficulties in being propelled, thus distentions by gas, or accumulations may result, pressing on the vena cava ascendence, arresting the proper circulation of the blood, or by its pressure cause biliary and pancreatic obstructions. The symptoms of duodenal trouble would be, a fluttering pulse if the vena cava was pressed on, and a pain in the right side in the direction of the right kidney, while the stomach was free from pain, and this coming on one or two hours after meals, percussion might throw some light on the matter.

In cases of gastric disease of long standing, duodenal disease is also to be expected. Want of bile may leave the food undigested but fermentable, giving rise to

inflation. Cherry stones may also form obstructions in this part of the digestive tube; a distention of the ascending and transverse colon may also press upon the duodenum thus obstructing it.

Headaches of indigestion. Dr. Warren states that there are two forms, the one referred to the stomach, the other to the upper intestines. When the stomach is at fault the person has some indistinctness of vision or mistiness before his eyes, he feels a dull pain or weight in his head attended with some confusion, he is slightly giddy and fearful of falling, he is sick at the stomach, and feels a sense of constriction about the fauces. When the duodenum or upper bowels are at fault, the patient is troubled with ocular spectra, there is chilliness of body, hands and feet. The pain in the head is severe, attended by a coldness and constriction of the scalp. There is also a slight giddiness, weight, distention and stiffness of the eyeballs, the hands and fingers are sometimes affected with tingling and numbness. Nausea is present, but seldom vomiting. There is usually flatulency and inactivity of the bowels, which last is pathognomonic.

302. The stomach headache occurs in the earlier stages of digestion, the duodenal in the latter stages thereof. Cutaneous irruptions following indigestion are called surfits, these pass off as a rule, but sometimes inveterate diseases of the skin are established by chronic diseases of the stomach.

Indigestion from Biliary derangements. The bile is necessary for to effect the digestion of fatty food. If it is deficient, the undigested food will ferment, if it is too abundant, diarrhoea will be the result. 306. (Diseases of the biliary organs are frequent in hot climates, this is very likely the case because the bile is not employed in the digestion of fatty substances, since they are not eaten and not wanted by the system, thus the

liver is rendered useless in the economy, and this being set behind, frets the liver, so that disease is the result. Scholl).

Chronic Indigestion, its symptoms. Dyspeptic phthisis has no existence, but the stomach in cases of phthisis suffers often with derangements. The patient thinks that if he could get something to keep his bowels in a good condition he would soon be all right, but it is impossible to grade an artificial stimulus so as to meet the varying conditions of organs. 317. The occurrence of a second affection independent of the pre-existing one, then the first affection will be relieved, if however it is a secondary affection symptomatic of the primary disease, then an aggravation will be the result. A clean bright tongue with permanent distress at the epigastrium, points towards the existence of organic mischief. 318. Long continued irritations will terminate in organic disease. Dr. Phillip. The pyloric orifice is more apt to become diseased from its exposed position. 321. Scheme for investigating the nature, causes and seat of indigestion. The symptoms may be general and special. The general symptoms are referable either to the functions of animal or vegetable life. Particular circumstances would embrace age, habits and occupation. Occasional questions regarding children and females. Collateral circumstances, regarding the seasons. 323. The patient should be examined lying down with relaxed abdominal muscles. In duodenal disease the patient will accurately trace the outline of the duodenum with his finger, from the stomach back to the loins on the right side and back again across the abdomen to the umbilicus. 325. The relief obtained from eructation, points to the stomach as the seat of the disease, though this is not always the case. Where the disease is confined to the stomach the patient can lie on either side; where it is confined to the duodenum or

liver, it will be difficult to lie on the left side. Fatlike lumps are sometimes discharged from the bowels, they are very much like inspissated lumps of mucus from the Cæcum. 336. Albuminous urine may be as Dr. Prout observes, derived from the chyle. 337. In gastric derangements, the urine is frequently loaded with lithates, amorphous, as lithate of ammonia; or crystalline, as uric acid. Dr. Phillip thinks that the appearance of acid in the urine is caused by the acid generally thrown off from the skin, being thrown upon the kidneys, decomposing the lithates, (forming lactate or phosphate of ammonia S.) and setting free the uric acid, becoming the source of gravel and stone. The whiter the sediments are, the more phosphates they contain. The brick red sediment is due to inflammations. The purpate of of Ammonia to visceral disease, generally of the liver.

Cure of indigestion. The beginning of disease must be in the loss of nervous energy, whatever the disease may be. 349. Unremitting cardialgia is suspicious of some disease of some other organ, frequently due to hepatic obstruction. 350. Carbonate of ammonia is frequently the best antacid, since it neutralizes some of the gases as well. 351. Broths from young animals give rise to heartburn and should be avoided. 352. Sulphuretted hydrogen is sometimes produced probably from decomposing albuminous matters in the stomach or intestines. 355. For duodenal irritation I know of no medicine as useful as vini colchici. 356. The white mustard seed is useful in some cases of alimentary torpor. In inflammatory conditions they are apt to prove injurious. Blisters sometimes act efficient when tenderness with vomiting exists. 362. The use of friction in the region of the stomach with a flesh brush, deserves a distinguished place. 368. Change of air is one of the best means of curing indigestion. 371. When the air is

moist it is a bad conductor of perspirable matter, and this may give rise to gastric troubles. The atmosphere of Chili is peculiarly dry. 372. The beneficial influence of a change of air is generally attributed by physicians to a change of habits which generally follow, and to the exhilarating impressions made. (Everything is new to such a person, therefore his curiosity becomes excited and he finds that he is making conquests which are to him an aggrandizement: on the other hand all the old troubles and duties are thrown off, and thus he enters on a new terrain filled with pleasures and no drawbacks. S.) 375. Cordials are drafts on the constitution, payable with compound interest a few months after date. —

378. Recapitulation. 1. Animal food is more stimulant and digestible and less flatulent than vegetable food.

2. The wholesomeness of food depends upon its mechanical (physical) conditions as well as upon its chemical composition.

3. Eat slowly and not too much, quit upon the first feeling of satiety. Meals should be taken at regular hours. The principal meal should be taken in the middle of the day, followed 4 hours after by a liquid one. No fresh meal should be commenced with until the preceding one is digested. Meals should not be taken in a state of fatigue or anger. Exercise should be taken 3 or 4 hours after meals.

Pulmonary Invalids. A fatty diet is indicated. As for medicines no one is so much worthy of reliance as the extract of hemlock. This remedy tranquilizes the irritation of the lungs more than anything else; it should be given in 5 grain doses, three times a day, gradually increased to a scruple until a slight giddiness or nausea is felt, or the bowels become relaxed.

286. A. B. Aged 24, amateur hunter, suffered from

headache, nausea and gastric acidity, in the course of a few years of such symptoms he became so dim of vision that he could write no more, cathartics failed to operate, died with sudden dyspnoea induced by pulmonary hemorrhage. — The stomach was larger and the intestines smaller than normal. Right side of the heart, dilated lungs filled with blood, brain white anæmic. — (Remarks: The act of vomiting and running caused an accumulation of blood at the right side of the heart consequently its dilation, the larger injection of food caused the dilation of the stomach, the food not passing through the intestines induced their diminished size. The collection of blood at the right side of the heart induced cerebral anæmia, the heart violently reacting on the blood injected it into the lungs with such force as to induce fatal hemorrhage. I remember when a boy to have repeatedly suffered with waterbrash after running, once especially after running towards the Lindenbush, when I came near to the, pit I was attacked violently. I attributed it to the running even at that time, and have been more careful since. The turgescence of the right side of the heart may arrest the flow from the liver and thus stop the portal circulation producing congestion of the stomach, terminating in vomiting. Scholl.)

Why we die.

The human machinery gets worse for the wear.

Not only organs that are visible to the eye may suffer a mechanical stretch, but just so those that can only be seen by the microscope; thus, the capillaries carrying the blood become varicose, the gallducts become dilated, the bowels become adherent, contracted, dilated, etc., it is the mechanical defects of the human machinery which bring about death.

Therefore disease is something interfering with the

human or organic mechanism. We inherit the imperfect make of parts and we die, by these parts not being any longer able to fulfil their functions. —

Inflammation of a tissue is accompanied by an increased and immature secretion. Thus the secretions from glandular structures become loaded with mucus. This increased secretion may constitute the inflammation of the epithelial elements, and run into cancer; while inflammation or increased straining upon the muscular element constitutes rheumatism or when attacking nerves, neuralgia.

Acclimatization.

As the bloodcells have a greater capacity for oxygen when under pressure, than when pressure is removed; just so the tissues have a greater capacity for salt in a cold climate. When I came to Washington I could not drink enough, this may have been due to the large quantity of salt my tissues contained constitutionally, which required a large quantity of water to remove. Suppose I had stayed there a considerable time then my thirst might have gone down as the salt was removed from the tissues. While I am back I feel no drought owing to the tissues reabsorbing salt.

Law. The absorbing capacity of an anatomical element is heightened or lowered by Meteorological variations—heat or cold, pressure or its removal.

To this may be due the difficulty of acclimatization. A changing from a cold country to a hot one, or changing from a high pressure to a low pressure atmosphere. In low pressure the circulation would have to be larger in order to take up sufficient oxygen while the lungs would have to enlarge in order to supply this oxygen. While the body would have to become lighter, so as not to require so much blood. Where the atmosphere was such as requiring not so much salt in the tissues, the tissues would become feverish, and require the su-

perfluous imbibition of fluids. While one going to a colder country would feel chilly, get cold easily, and not caring for drink.

Individuality of anatomical elements.

August the 6th, 1876.

Observing the red hair of W....., I was struck with the idea that every cell of the human body maintains its individuality, that it lives independent of all other cells, regarding them only as outside media to obtain its nourishment; hence as much independent of one another as human individuals are composing the human society. Thus every cell reproduces its kind, and the reproduction is only dependent on the cell. Red hair cells will reproduce red hair cells again. The cells composing the black mole on the face of W. M....., reproduce their own kind and do that just as fast as the rest of the body is reproducing its cells, so that renewal and decay are balanced. In a morbid growth it is just the same way as with the other cells only with this difference, they are produced faster than they die. Those on the outside being cut off from nourishment, have to die by necrosis. The whole of a morbid growth is the brood of one diseased cell, the individuality of which is reproduced in a multiple ratio. Since a removal of the skin is followed by a scar, it is positive that the skin is an individuality not reproduceable, but transplantable. It might thus be possible to transplant the flayed scalp of a dead man, to a living one.

Get your experience from little things, from minor experiments, as I have done with publishing the Journal of health, instead of undertaking a great paper.
